

## ECAT Physics Chapter 2 Vectors and Equilibrium

Sr	Questions	Answers Choice
1	Two forces each of 10 N act on a body, if the force are inclined at $30^\circ$ and $60^\circ$ respectively with x-axis, then x-component of their resultant is:	A. 20 N B. 13.66 N C. 10 N D. 8.66 N
2	The resultant of two velocities 3 m/sec and 400 cm/sec making an angle $90^\circ$ with each other is:	A. 20 m/sec B. 5 m/sec C. 3 m.sec D. None of these
3	If the vector 5 N lies along with x-axis, then its component along y-axis will be:	A. Zero B. 5 N C. 7 N D. 10 N
4	A person starts his journey from a point O, travels 4 Km SW, then 4 Km NW, and finally 4 Km north-east. At what distance is he now from point O?	A. 0 Km B. 4 Km C. 8 Km D. 12 Km
5	All trigonometric functions (sine, cosine, tangent etc) are positive in:	A. 1st quadrant B. 2nd quadrant C. 3rd quadrant D. 4th quadrant
6	The rectangular components of a vector are equal in magnitude when the vector makes and angle _____ with their x-component:	A. $0^\circ$ B. $30^\circ$ C. $45^\circ$ D. $60^\circ$
7	A vector of magnitude 5 N is added to a vector of magnitude 8 N while the orientations are changeable. Range of their possible sum will be very from:	A. Zero to 3 N B. 1 N to 13 N C. 13 N to 3 N D. None of these
8	The vector in space has:	A. One Component B. Two Components C. Three Components D. Non of these
9	The direction of a vector in space requires:	A. X-axis B. X and Y-axes C. XYZ axes D. X, Y, Z axes

10	Two vectors having different magnitudes:	A. Have their directions opposite B. May have their resultant zero C. Cannot have their resultant zero D. None of these
11	By convention, torques producing clockwise rotation are taken as:	A. Positive B. Negative C. Zero D. None of these
12	Tick the correct answer:	A. Torque is a vector quantity B. Torque is the turning effect of a force C. Torque is called moment of a force D. All of above
13	The change of order of vectors in a dot product of two vectors:	A. Changes its value B. Doesn't change it's value C. Changes the direction product quantity D. None of these
14	Cosine of an angle is positive in:	A. 2nd quadrant B. 3rd quadrant C. 4th quadrant D. All of these
15	If x-component of a vector is -3 N and y-component is 3 N, then angle of resultant vector will x-axis is:	A. $45^\circ$ B. $315^\circ$ C. $135^\circ$ D. $225^\circ$
16	The magnitude of the resultant of two forces may be increased by:	A. Increasing the angle between them B. Decreasing the angle between them C. Drawing a triangle to represent them D. None of these
17	Scalar product is also called:	A. Cross product B. Dot product C. Product scalar D. Product vector
18	For measuring the angle between two vectors graphically, we join:	A. Tails of both the vectors B. Tail of one vector with the head of other C. Heads of both the vectors D. None of these
19	Two forces of 10N and 8N are applied simultaneously to a body. The maximum value of their resultant is:	A. 20 N B. -2 N C. 18 N D. 22 N

D. 36 N

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If two forces of magnitudes 3.5 and 2.5 N act on a body such that the angle between the forces is zero, then magnitude of the resultant will be:

A. 1.0 N

B. 6 N

C. 3.5 N

D. 12 N